

Two new subtribes, Stokesiinae and Pacourininae, of the Vernoniae (Asteraceae)

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Abstract.—New subtribes Stokesiinae and Pacourininae are established in the Vernoniae (Asteraceae) for the Southeastern United States genus *Stokesia* and the South American genus *Pacourina*

Revisions of the Vernoniae by the author have until recently involved mostly Western Hemisphere members (Robinson 1996). In the absence of studies of Old World members of the tribe, among which relatives might have been discovered, the monotypic Western Hemisphere genera *Stokesia* L'Hér. and *Pacourina* Aubl. were left unplaced as to subtribe. More recent studies of Old World Vernoniae by the author have made it clear that *Stokesia* and *Pacourina* are most closely related to other Western Hemisphere genera, but that they are deserving of separate subtribal status. The new subtribes are described below.

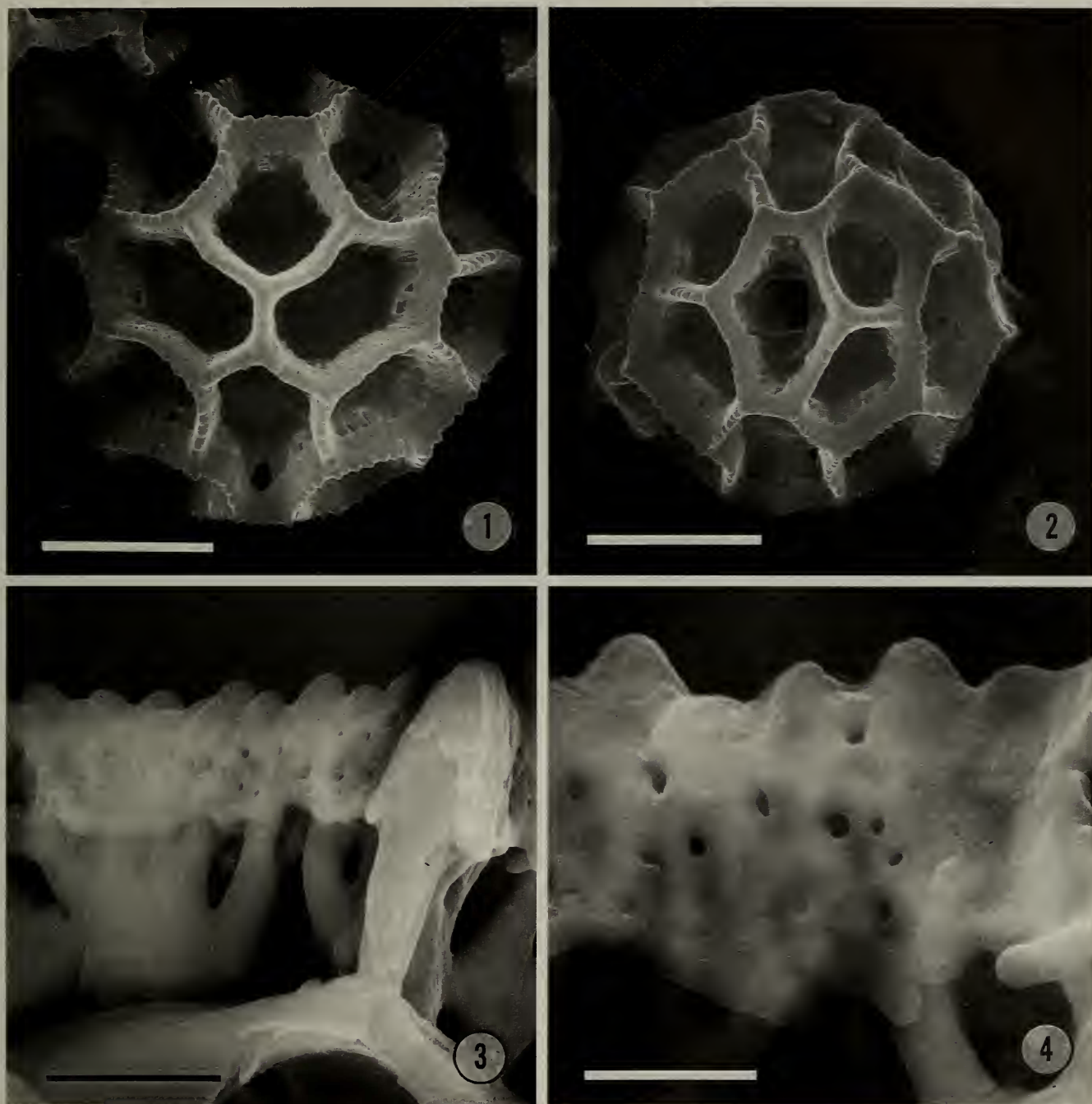
The genus *Stokesia* has long been noted for its mostly liguliform corollas, resembling those of the tribe Lactuceae, *Fitchia* Hook.f. of the Heliantheae, and some Mutisieae such as *Hyaloseris* Griseb. (Espinar 1973). The tribal position has sometimes been questioned, but placement has usually been in its correct position in the tribe Vernoniae (Bentham & Hooker 1873, Hoffmann 1890–1894). The genus contains a single species, and has been promoted as a possible crop plant useful as a source for epoxy resins (Gunn & White 1974). The plant is also widely cultivated as an ornamental. A drawing has been provided by Gunn and White (1974), and a color photograph can be seen in Rickett (1967). The pollen of the genus has a rather weak perforated tectum and a unique lophate pattern with trisected colpi meeting at the poles

(Figs. 1–4). The genus has a chromosome number that differs from most other Vernoniae, especially other genera from the Western Hemisphere. A first count of $n = 9$ (Jones, 1968) has been corrected by a series of six subsequent counts of $n = 7$ (Jones 1974). Almost all other New World Vernoniae have $n = 16$ or 17 . Most Old World Vernoniae have $n = 9$ or 10 .

Stokesiinae H.Rob., subtribus nov.

Type: *Stokesia* L'Hér., Sertum Angl. 27. 1789.

Plantae herbaceae perennes ad 0.5 m altae, sparse pilosae, pilis longis simplicibus non septatis. Folia plerumque rosulata alterna base anguste petioliformia in nodis vaginata. Inflorescentiae paucis capitatae laxae cymosae. Capitula pedunculata; bractae involucri 40–50 in seriebus 3–4, bractae exteriores in appendicibus longe foliiformes margine spinosae, bractae interiores angustiores in apicibus setiferae. Flores 60–70 homogami; corollae azurae vel albae plerumque late liguliformes in limbis 5-lobatae, corollae centrales ca. 3 actinomorphae; thecae antherarum base rotundatae, cellulis endothecialibus distincte lineatis, lineis in partibus longitudinalibus ceterum variabiliter arcuatis; appendices apicales antherarum breves glabrae in parietibus cellularum tenues; basi stylorum non noduliferi; rami stylorum glandulopunctati, papillis aciculiformibus argutis.



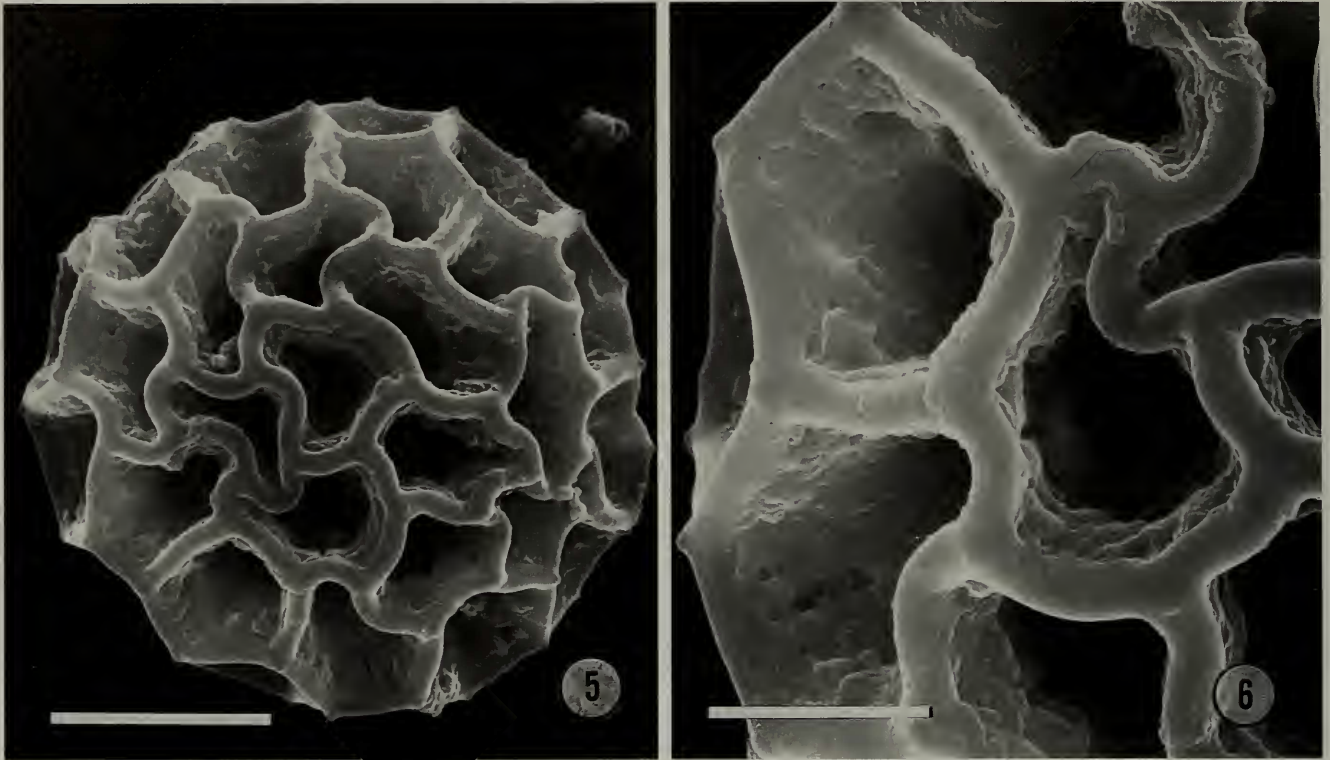
Figs. 1–4. *Stokesia laevis* (Hill) Greene, Knobloch 1426 (US), Mississippi. 1. Polar view, line = 20 μm . 2. Colpate view, line = 20 μm . 3, 4. Detailed views of muri with baculae and perforated tectum. 3. line = 3.8 μm . 4. line = 1.76 μm .

Achenia 3-4-angulata plerumque prope basem glandulo-punctata, cellulis subsuperficialibus porosis fibriformibus, raphidis subnullis minutis breviter oblongis; squamae pappi 4 aut 5 subulatae perfacile deciduae 8–9 mm longae. Grana pollinis triporata, lacunis colpi rhomboideis, muris minute crenulatis (Figs. 1–4). Numerus chromosomatum $n = 7$.

The single species in the subtribe is *Stokesia laevis* (Hill) Greene, which is native

to the Southeastern United States in southern South Carolina, Georgia, Alabama and Mississippi, western Florida and eastern Louisiana.

Pacourina is a singularly distinctive emergent aquatic plant of tropical America. The inflorescence, with heads sessile in a series of leaf axils, is reminiscent of the *Lepidaploa* Group in the subtribe Vernoniinae. The sclerified apical anther appendage, however, is totally foreign to that group and



Figs. 5, 6. *Pacourina edulis* Aubl., Killip and Smith 14576 (US), Colombia. 5. Whole grain, line = 15 μm . 2. Closer view showing lacuna with pore and lack of micropunctations on muri, line = 6.7 μm .

is extreme for even the Piptocarphinae and Lychnophorinae. Triporate, psilolophate pollen is known otherwise in the tribe Vernonieae only in the Paletropical subtribe Erlangeinae, but the pollen of *Pacourina* is larger than pollen in any members of that group, and the inflorescence and anther appendages are totally different. Thus, the combination of characteristics precludes placement in any presently existing subtribe of the Vernonieae. Closest relationships of the new subtribe are not known, but they are presumed to be Neotropical. The distinctive nature of the plant may derive to considerable extent from its aquatic specialization.

Pacourininae H. Rob., subtribus nov.

Type: *Pacourina* Aubl., Hist. Pl. Guiane 2:800. 1775.

Plantae carnosae aquaticae, folia simplicia alterna valde dentata. Inflorescentiae seriatae cymosae, bracteis foliiformibus; capitula sessilia axillaria solitaria late campanulata homogama; bractee involucri ca. 50 latae virides et margine albae; receptacula

epaleacea; flores ca. 50 in capitulo; corollae purpureae, lobis distaliter valde scleroideis; thecae anterharum base dentate appendiculatae; appendices apicales antherarum glabrae valde scleroideae; basi stylorum leniter latiores, pilis stylorum acicularibus. Achenia 10-costata suberose corticata in sulcis idioblastifera; setae pappi breves multiseriatae deciduae, squamellis persistentibus. Grana pollinis triporata psilolophata emicropunctata (Figs. 5, 6).

The single species in the subtribe in *Pacourina edulis* Aubl. of Central America and tropical South America. The species is well illustrated in Nash and Williams (1976, fig. 7, p. 461).

Acknowledgments

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